

REMARKS

The present Reply is being filed together with a Request for Continued Examination.

Claims 5-19 are pending. Claims 5, 18, and 19 are the independent claims.

Independent claims 5, 18, and 19 have each been amended to clarify and explicitly recite that "the sub-monolayer islands within each layer are located in a common plane perpendicular to a growth direction for the sequence of layers." See, for example, Figure 1 in applicants' specification.

Claims 5-19 stand rejected as allegedly failing to comply with Section 112. Specifically, at page 2, the action states: "Claims 5, 18, and 19 each recite the subject matters about the separated sub-monolayer islands; however the specification lacks an adequate description regarding how such separated sub-monolayer can be formed, especially regarding what type of patterning method and/or mask is used to pattern such separated islands, while ensuing [sic] the remaining extremely thin sub-monolayer be kept in tact." We respectfully traverse.

Contrary to what is stated in the action, formation of the claimed sub-monolayer islands do not require any "patterning method and/or mask is used to pattern such separated islands." Rather, the islands emerge on their own following the deposition of the respective materials (e.g., ZnSe and ZnTe). It is believed that the islands emerge to minimize the strain-energy of the system arising from the difference in lattice constant between the two materials. This phenomenon is sometimes referred to as "non-wetting growth," and is known for material systems such as gold islands on graphite.

For example, in the present context the claimed structure can be formed by first depositing a layer of ZnSe, and then subsequently depositing ZnTe on the ZnSe layer. Upon relaxation, the ZnTe material will diffuse on the closed layer of ZnSe and form the islands due to the difference in lattice constant between the two materials. Thereafter, ZnSe is deposited on the sequence to surround the islands and provide a base for additional ZnTe/ZnSe layers, as desired. This sequence is generally described at page 5 of the specification, and as noted above, requires no special patterning or masking as alleged by the action.

Accordingly, we ask that the Section 112 rejection be withdrawn.

The action also continues to reject the claims as allegedly anticipated by U.S. Patent No. 5,396,103 ("Oiu"). We respectfully traverse.

As noted above, independent claims 5, 18, and 19 have each been amended to clarify and explicitly recite that "the sub-monolayer islands within each layer are located in a common plane perpendicular to a growth direction for the sequence of layers." The amendment clarifies that the claims require, that in a direction perpendicular to the growth direction for the sequence of layers, there are *several* sub-monolayer islands embedded in each layer of the matrix. This feature is depicted schematically in Figure 1 of the specification, and is simply lacking in Oiu.

Specifically, Oiu describes alternating layers ZnTe and ZnSe, such as shown in Figure 12, and goes on to state that "[t]he ZnTe layers can be complete or fractional monolayers" (col. 13, lines 60-63). Thus, even if each "fractional monolayer of ZnTe" in Oiu can be considered to correspond to one of the claimed sub-monolayer islands, there would be no more than one such sub-monolayer island in any plane perpendicular to the growth direction of the alternating layers of ZnTe and ZnSe. As a result, the disclosure in Oiu does not disclose what is required by the claims – namely, that in a direction perpendicular to the growth direction for the sequence of layers, there are *several* sub-monolayer islands embedded in each layer of the matrix.

Accordingly, we ask that the anticipation rejection be withdrawn.

In view of the above, we ask that the application be allowed.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

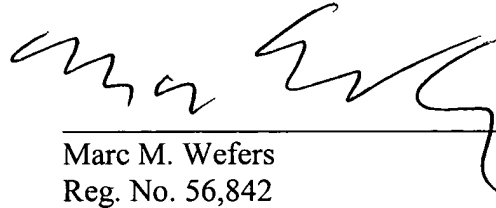
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Enclosed is a check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, referencing 12406-018001.

Respectfully submitted,

Date: 1/19/06



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